

*Supplementary materials*

**Social Acceptability of a Sustainable Forestry Industry in Puerto Rico: Views of Private, Public, and Non-profit Sectors**

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Supplementary Materials.

**A. Questionnaires in Spanish used to guide the focus group discussions with the corresponding translation into English in parenthesis**

*1.1 Discusión de cada escenario (Honduras, Republica Dominicana y Puerto Rico).* (Discussion of each scenario (Honduras, Republica Dominicana, and Puerto Rico))

*1.1.1 ¿Crees que algunas de las prácticas discutidas a continuación podrían aplicarse en Puerto Rico?* (¿Do you think that some of the practices discussed below could be applied in Puerto Rico?)

*1.1.2 ¿Cuáles prácticas de manejo deberían dirigir estos esfuerzos de extracción de madera?* (¿What management practices should guide these logging efforts?)

*1.2 Discusión de los tres escenarios* (Discussion of the three scenarios)

*1.2.1 ¿Crees que algunas de las prácticas discutidas a continuación podrían aplicarse en Puerto Rico?* (¿Do you think that some of the practices discussed below could be applied in Puerto Rico?)

*1.2.2. Por favor clasifique los escenarios presentados por nivel de deseabilidad.* (Please rank the scenarios presented by your level of desirability)

*1.2.3. ¿Cuáles prácticas de manejo deberían dirigir estos esfuerzos de extracción de madera?* (¿What management practices should guide these logging efforts?)

*2.La Sostenibilidad: Definición Operacional (imagen).* (Sustainability: Operational Definition (image))

2.1 *Si suponemos que las prácticas de manejo anteriores deben cumplir con los estándares anteriormente mostrados para buscar la sustentabilidad, (If we assume that the previous management practices must meet the standards shown above to seek sustainability,)*

2.2 *¿Cambiaría su clasificación de escenarios o alguna de las prácticas enumeradas? (¿Would you change your scenario classification or any of the listed practices?)*

3. *Mercados potenciales de madera y productos otros productos forestales (Potential markets for wood and other forest products)*

3.1 *¿Puede identificar mercados potenciales para la cosecha de madera? Algunos ejemplos incluyen productos artesanales, muebles, artículos para el hogar, papelería, astillas de madera, composta, estructuras residenciales o comerciales, etc. (¿Can you identify potential markets for harvested timber? Some examples include: craft products, furniture, household items, stationery, wood chips, compost, residential or commercial structures, etc.)*

3.2 *¿Cuáles nuevos productos podrían ser importantes? (¿What new products could be important?)*

4. *Fenómenos Meteorológicos (Extreme weather events)*

4.1 *¿Cómo afectan los fenómenos meteorológicos extremos a la extracción de madera en Puerto Rico? (¿How do extreme weather events affect timber harvesting in Puerto Rico?)*

4.2 *¿Puede dar ejemplos concretos del impacto que tendrían los huracanes, terremotos y otros fenómenos meteorológicos extremos en una industria maderera local? (¿Can you provide specific examples of the impact that hurricanes, earthquakes, and other extreme weather events would have on a local wood forestry industry?)*

## **B. Focus group participant quotes that informed the results**

3.1 *Management and Sustainable Production Scenarios*

3.1.1. *Scenario 1: Agroforestry Cooperative*

*Private Sector Focus Group:*

"My experience has been that for wood and artisan work, individuals in PR like to work by themselves and look at investment capital from an individual, not collective manner. Artisans learn from others and their own experience, but some are concerned their ideas may be stolen, so they may not be willing to work in a cooperative setting. In Puerto Rico, the experience has been that artisans may indicate they don't want to adopt uniform work procedures, or use particular wood".  
"I think the cooperative setting would work if the State is willing to let farmers have access to existing wood resources".

*Non-profit Focus Group:*

"It could perhaps work in the case of PR if it is developed in public lands, or perhaps through a landowner's association to work in an integrated manner so lands could have a sustained yield".

*Public Sector Focus Group:*

"I think this scenario is attractive, given that landowners don't have plots of land that would allow them to sustain high production levels on their own, and I support the cooperative model. Initial costs and subsequent benefits are shared. There are benefits for the individual and the community, including employment creation".

"This scenario could be an option for public lands, but I would implement it as a hybrid, using the cooperative model. There should be a vision of sustainable management in public forest lands with

community intervention, keeping a balance between economic and environmental benefits. The money would revert to the community”

### *3.1.2. Scenario 2: Private Sector Medium-Sized Enterprise*

#### *Private Sector Focus Group:*

“I would see it as an ideal scenario where I would produce something with a single buyer, and the buyer would provide money to buy equipment. It would be ideal to have a fixed buyer for ten years”. “I became aware that there was only one buyer, and that it was in turn the investor, so I think that may be a conflict of interest, and I don’t see it as something so positive. Both have their hands tied in a sense. While it may be true that one could impose restrictions on excessive extraction, there is no commitment to meet local needs. This seems more like a privatization exercise”.

#### *Non-profit Focus Group:*

“This is a more traditional commercial operation, perhaps grounded on a tradition in the context of that country. We would have to refocus what traditional commercial is in the Puerto Rican context, with a smaller scale production, perhaps musical instruments”.

#### *Public Sector Focus Group:*

“This scenario could be an option for public lands, but I would implement it as a hybrid, using the cooperative model. There should be a vision of sustainable management in public forest lands with community intervention, keeping a balance between economic and environmental benefits. The money would revert to the community”.

### *3.1.3 Scenario 3: Small Artisan Furniture Making Business*

#### *Private Sector Focus Group:*

“We need to find out if the international market is seeking the type of wood we can produce, more exotic, with a higher cost structure, just like we export gourmet coffee. We would have to identify a place and a market there could be a good market in the US or Europe, we would just need to focus on the market identification effort. Given the small local market and our higher cost structure, research into US and international markets may be warranted”.

#### *Non-profit Focus Group:*

“Local wood furniture does have a market. I think the idea of developing a digital market is interesting”.

#### *Public Sector Focus Group:*

“There are many producers who just gather wood on their truck, so this type of business benefits from raw material that is available free or at a much lower price to produce furniture. This scenario describes the reality of PR, where many use wood from pruned trees by the PR Power Authority, and from outside sources.”

“This scenario is real and we need to work to facilitate conditions for those with the interest to pursue this scenario.”

### *3.2. Potential Markets for Wood and Other Forestry Products*

#### *Private sector focus group:*

“I’m aware of potential buyers in the US and Europe who would be willing to pay for a good piece of wood. Some of these more desirable woods could include mahoe (*Talipariti elatum* (Sw.) Fryxell),

lignum-vitae (*Guaiacum* spp.), and Spanish elm (*Cordia alliodora* (Ruiz & Pav.) Oken), these are exotic woods with a high market value.”

“We should see our wood as an exotic resource and look for small niche markets. We need to think about our needs, our current production characteristics, wood quality, and compare different markets to identify where we could be competitive”.

“We would need to identify the specific types of wood that would be cultivated and respond to specific market niches. There is also a time component, because it takes a long time to grow trees, so we have to think in the long term, which species to grow to reach a market niche, the time frame could be at least 20 to 25 years.”

*Non-profit focus group*

“I would highlight the opportunity to grow products under the forest canopy that may lead families to a secondary income source, such as seeds. I see an agroforestry system that leads to a diversified product base and complies with biodiversity and conservation requirements”.

“There should be a market that values a quality local product. This should be accompanied by a marketing and branding effort associated with high quality”

*Public sector focus group:*

“Since we know wood production and harvesting take a long time, we would have to look for intermediate products such as meat, fruit, vegetables, including coffee and cocoa, which would grow in tree shade...these products would help farmers with income while they wait for wood products to generate revenue”.

### *3.4. Impact of Extreme Weather Events on Wood Harvesting*

*Private sector focus group*

“Government agencies could not work together to facilitate the use of felled trees and wood. It would be ideal that government, industries and artisans establish protocols for wood use after extreme weather events. We found after the hurricane that many State forests don’t have the infrastructure necessary to recuperate wood. There should also be planning for wood harvesting in State forests where there is strict conservation, because there will be felled trees as a result of extreme weather events. There is a fine line between conservation and exploitation”

“If we’re thinking long term, we should think about which species were able to resist the hurricane force winds”

*Non-profit focus group*

“We should not only consider extreme weather events such as hurricanes, but also droughts, which may lead to fires, which in turn may have an adverse effect on wood quantity and quality (stains, etc.). Risk factors should be included in diverse calculations. Having contingency plans is also important”

“If another event were to occur, how can felled wood be used in a timely manner, so it would not lose its capacity to be transformed to other use...We could plant trees that are more resistant to extreme weather events”

*Public sector focus group*

“We need a plan for wood harvesting, to be adopted by landowners who wish to do so, including urban areas, and preventive management, and for management after a disaster”